

Report Samlany

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A N N U A L R E P O R T

M E D I C A L D E P A R T M E N T

S U D A N G O V E R N M E N T

O N C I V I L M E D I C A L W O R K I N T H E S U D A N

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*Dec 19
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ANNUAL REPORT

MEDICAL DEPARTMENT - SUDAN GOVERNMENT

ON CIVIL WORK IN THE SUDAN.

PROGRESS AND FURTHER DEVELOPMENT.

Until recently the Medical Department has had to limit its efforts to building general hospitals at important centres for the treatment of Government officials and all natives who were within reach of the hospitals, and to instituting short medical tours from these hospitals as centres. In this way very useful work has been performed, great deal of disease has been cured, or relieved, epidemics have been combatted and the hospital has become a centre for the general sanitary control of the provinces; but, none the less, large sections of the population were still quite out of reach of any medical assistance.

More recently, however, it has been possible to take definite steps towards reaching these outlying populations.

DISPENSARIES.

(1) By the establishment of a number of dispensaries staffed for the most part by Assistant Medical Officers, i.e. selected hospital attendants who are given a very short and concise medical and surgical training to fit them for these posts.

HOSPITAL SHIP.

(2) In the case of the White Nile area by the provision of a hospital ship to patrol this river and its navigable tributaries and thus to bring medical aid to natives within reach of the river. When natives know that the hospital ship will be at a certain place at a definite time they will in some cases come from as far as a seven days' journey to receive medical assistance.

The hospital ship is also used as a base for medical

tours into the interior.

The dispensaries referred to are distributed over the provinces either :-

- (1) At places which are the centres for a large population which is quite out of reach of any hospital.
- (2) At places which are convenient centres for dealing with some endemic disease which it is necessary to combat, e.g. Bilharziasis, Ankylostomiasis and Malaria.

These dispensaries in common with the general sanitary control of the provinces are under the supervision of a British Medical Inspector who is centred on the province hospital, but who travels through the province by rail, river and car and in certain provinces still by camel or horse and who advises the Assistant Medical Officers at the dispensaries in the carrying out of their work and arranges for the despatch of the more serious cases to the central hospital.

The following dispensaries are in existence at the present time:-

- 2 Dispensaries in Halfa Province.
- 4 & one additional Bilharzia centre in Dongola Province.
- 5 in Berber Province.
- 3 in the Red Sea Province.
- 6 in the Blue Nile Province.
- 2 in the White Nile Province.
- 3 & a hospital ship in the Upper Nile Province.
- 4 in Kordofan Province.
- 2 in Kassala Province.

A great deal of very useful work has been done at these dispensaries and natives will not uncommonly make journeys of several days' duration to attend them.

In particular, it has been possible this year to open

a dispensary among the Baggara Arab tribes at Abu Zabad - this is also a centre of severe Bilharzia infection - and also to open a dispensary at Soderi among the camel owning tribes of northern Kordofan. The latter have up to the present been quite untouched by any medical work and they immensely appreciate the work of this dispensary. I have no doubt that its influence will be far reaching.

NEW DISPENSARIES.

The Medical Department is being called upon to open three new dispensaries in Kassala Province in 1924 and 20 new dispensaries in the Ghezirah in 1925 in connection with the irrigated area. Twenty three men of the Assistant Medical Officer type (Sanitary Hakims) are being selected and trained for these posts.

In addition, dispensaries are being urgently called for in certain other places such as Muglid in Dar Humr, at Gabel-ain on the White Nile Province and in some of the southern provinces.

The need for these dispensaries is so urgent that the posts have to be filled by very partially trained men, i.e. the Assistant Medical Officers referred to above, but it is fully realised that more fully trained men must be provided for the future and to meet this need the KITCHENER SCHOOL OF MEDICINE has been founded. The first 10 students will commence their training this year and they will be ready for work in dispensaries and small hospitals in January, 1929.

In the meanwhile the increasing demand for Medical Officers for these dispensaries will have to be met by the present type of Assistant Medical Officers who are given the very limited and purely empirical training referred to above.

MEDICAL WORK AMONG WOMEN.

It has for some years been desired to do more for the women of the Sudan. The maternal and infantile mortality at

child birth is very high indeed largely owing to native customs and the dirtiness and inefficiency of the midwives. The women of the better class are often unwilling to ask for medical assistance except in the last resort, nor do they readily seek advice for their children.

The women of the Sudan as a whole are very conservative and are bound down by their own customs and in addition there is a strong disinclination on the part of the husbands to let their wives attend an ordinary mixed hospital.

It is desired to gain the confidence of the women, to encourage them to seek medical assistance when ill themselves and to seek advice as regards the care and up-bringing of their children.

This will of necessity be slow and can only be achieved :-

(1) By gradually improving the type and training of the midwives throughout the Sudan and by replacing the old, dirty and ignorant midwives at present practising by younger better trained and more enlightened women. The two chief difficulties presented are:-

- (a) To obtain a suitable type of women to train, and
- (b) To get the natives to employ them when they are provided.

Distinct progress is being made in this direction through the work of the Midwifery Training School at Omdurman established in 1920. See note on this subject page 26.

(2) By obtaining and training a better class of female nurse throughout the Sudan. Up to the present it has not been found possible to obtain for nurses women of a suitable class or women who have the intelligence and moral reliability to admit of their being adequately



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trained. It is hoped to make a further effort in this direction next year by building an entirely separate self contained hospital at Omdurman which it is hoped that the better class native women as well as others will freely attend, and to use this as a training centre for female nurses for the whole Sudan and thus to do for the female nurses what is at present being done for the midwives. The work of training and replacement will necessarily be a gradual one, but when once women of the right type have been encouraged to come forward and have received an adequate training it will be possible to establish secondary training centres in other large towns.

- (3) By providing at all hospitals accommodation for women which conforms to the native prejudices with regard to seclusion. This is being gradually carried out.

HEALTH:-

The health of the Sudan during the past year has been good.

The malaria incidence throughout the central and northern Sudan was markedly decreased. This was largely due to the more favourable spacing of the rains, but the marked improvement at Makwar and Khartoum is to be largely attributed to the more elaborate anti-malarial precautions initiated at these places.

Attention is invited to the note on Makwar, page 11, which demonstrates again how much can be accomplished in malaria prevention in an area originally a malarial swamp and which presents very great technical difficulties to adequate drainage and mosquito prevention.

An epidemic of small pox occurred in the southern part of the Red Sea Province and gave cause for some anxiety, but was successfully dealt with. See page 10.

Outbreaks of Dengue fever occurred at Atbara and Nahud. See pages 9 and 13. Dengue fever is extremely rare in the Sudan

except on the Red Sea Littoral.

PROGRESS OF HOSPITAL WORK.

The number of outpatients treated in hospitals was 327,528 as against 292,856 in 1922 and 312,348 in 1921.

The number of inpatients treated in hospitals was 18,172 as against 17,742 in 1922 and 17,902 in 1921.

The number of patients treated at dispensaries was 61,335 as against 62,771 in 1922.

PERSONNEL.

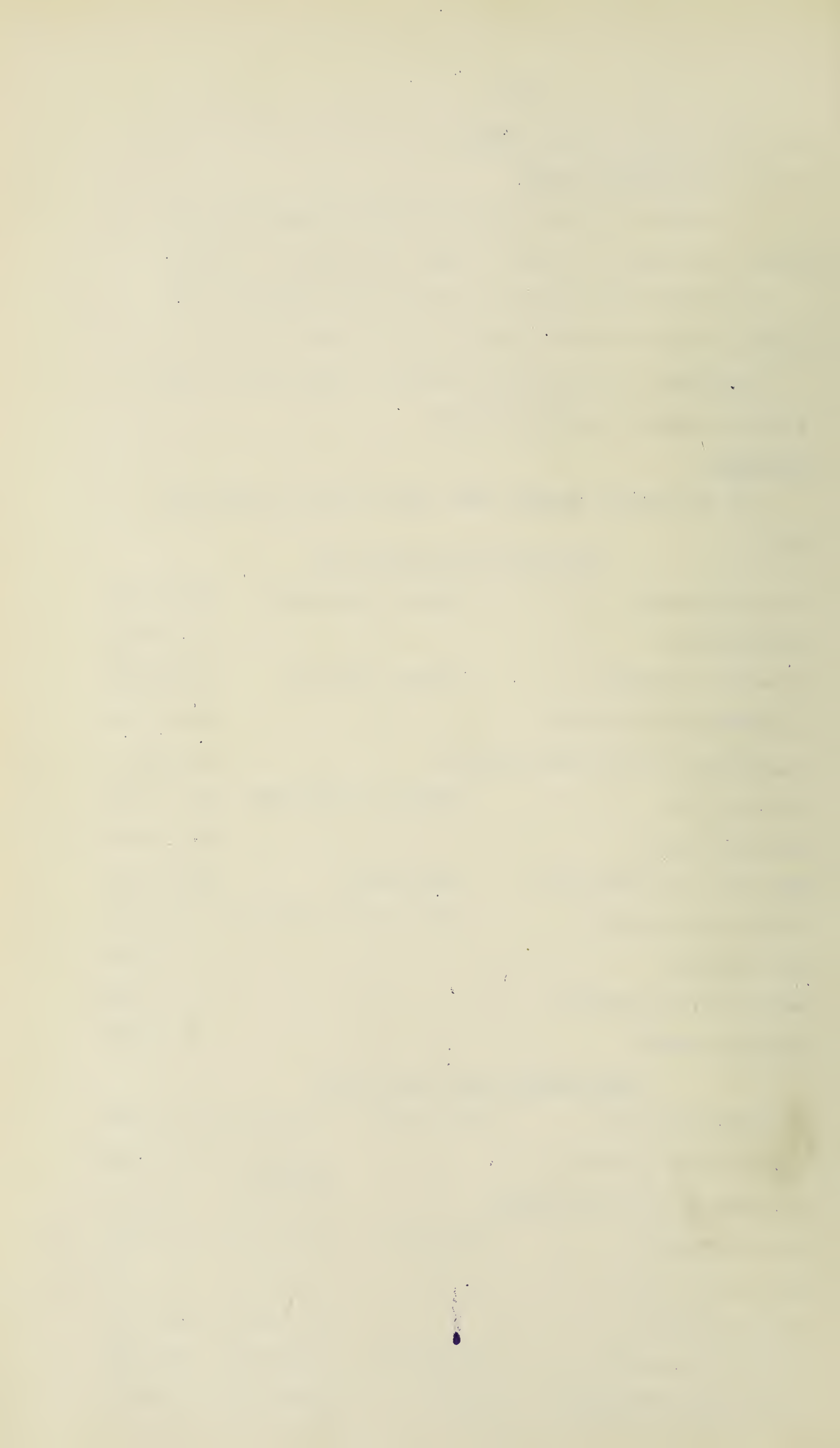
The following changes have taken place during the year:-

A P P O I N T M E N T S.

Dr.D.O.Richards	Medical Inspector	18.12.22.
Dr.H.A.Crouch	"	3. 9.23.
Dr.Daud Eff.Salman	Medical Officer	27.11.22.
Dr.Ibrahim Eff.Malhama	"	20.10.22.
Dr.Mohd.Eff.Abdel Fattah Sherif	"	30.4.23.
Mr.D.R.Walker	Sanitary Inspector	23. 4.23.
Mr.R.G.Sheehan	"	16. 8.23.
Helim Eff.Amin El Gayer	Dispenser	20.11.22.
Abdulla Eff.Bedawi	Asst.Medical Officer	1. 1.23.
Ali Eff.Taha	"	1. 1.23.
Osman Eff.Mohd.El-Nur	"	1. 1.23.
Awad Eff.Bakhit	"	1. 1.23.

RESIGNATIONS AND DISCHARGES.

Dr.Habib Bey Kahil	Med.Officer - Resigned.	24.11.22.
Dr.Marcos Eff.Butros	" Contract	10.12.22.+ expired
Dr.Bishara Eff.Assad Moutran	" Resigned	9. 3.23.
Mr.R.G.Connolly	San.Inspr.	Discharged 16.3.23.
Mr.A.Allan	"	Discharged 1. 4.23.
Mr.S.H.Jenkins	"	To Pension 12.8.23.
Kambal Eff.Omarah	Translator	Dismissed 28.9.22.
Abdel Aziz Eff.Hashim	Clerk	Discharged 6.6.23.



Hassan Eff. Ahmed Mahmud Clerk Discharged 29.9.23.

T R A N S F E R S

Kaim.B.H.H.Spence Bey	From E.A.	1. 4.23.+
Kaim.B.H.H.Spence Bey	To E.A.	3. 7.23.+
Yusb.Basile Eff.Girgis Susu	"	1. 7.23.
Yusb.Mansur Eff.Kutait	"	1. 7.23.
Yusb.Nikola Eff.Haddad	From E.A.	1. 7.23.
Yusb.Elias Eff.Jabre	"	1. 7.23.
Yusb.George Eff.Sasin Najjar	"	1. 7.23.
M.A.Mohd.Eff.Goma	To E.A.	26. 3.23.+
M.A.Philip Eff.Mobarak	"	11.2. 23.+
M.A.George Eff.Murad Rizk	From E.A.	21. 1.23.+
M.A.Abdel Halim Eff.Abdel Rahman Ahmed.	"	1. 4.23.+

→ Sleeping Sickness Officers.

All Sanitary Inspectors transferred from Province Budgets to Medical Department from 1.1.1923.

MEDICAL WORK BY PROVINCES.

KHARTOUM PROVINCE:-

Khartoum Civil Hospital. Very good work continues to be carried out at the civil hospital.

An Xray apparatus has been installed and good photographic work is being turned out.

A new Out-patient Department is in course of construction to allow the out-patients, the number of whom is steadily increasing, to be more adequately dealt with. It will also admit of systematic out-patient teaching being given to the students of the Kitchener School of Medicine.

The Maternity Department continues to do good work. Fifty three cases were admitted this year as against an average of 34 over the last three years. Owing to the fact that cases are never evenly distributed over the year it is often very difficult to deal with all the cases that

apply for admission. A new maternity block is being asked for.

Omdurman Civil hospital shows some increase in admissions, in out-patient attendance and in operations. It is hoped that this hospital will be completely rebuilt at an early date. Khartoum North Dispensary shows steadily increasing work. Khartoum North Prison. The general health of the prison continues good.

Leper Hosh. This hosh although it is under the Medical Department is looked after by Dr.E.Lloyd of the Church Missionary Society. Dr. Lloyd and his assistants administer medical treatment and supervise the general well being of the patients.

Dr. Lloyd reports that :-

Owing to deficient musculature of the patients it is impossible to give more than 2 c.c. of Moogrol at a dose instead of 6 c.c. - 10 c.c. as given in Honolulu.

Moogrol is now being given in 2 c.c. doses every alternate week alternately with 1 c.c. of colloid antimony sulphide.

It is too early to draw any conclusions, but the cases are too advanced to afford much hope of successful treatment.

Over a period of nine months the following injections have been given :-

Moogrol intravenous	24
" intramuscular	53
Colloid antimony intravenous	82
Sodium hydnocarpate intravenous	180

One elderly patient of whom little was expected improved wonderfully and was discharged in January. He was in good health six months later.

There are now 23 inmates : of these 16 are lepers.

BERBER PROVINCE:-

Atbara Civil Hospital. An additional strain has been thrown

upon the work of this hospital owing to the considerable number of sick Saidis who have had to be sent down to this hospital from Railhead.

A lying-in and first class women's block with accommodation for a British nurse is very badly needed and will it is hoped be commenced in 1924.

Atbara Town. Heavy rains occurred during the first week in August and flooded the town and did considerable damage to the houses of the town and the railway cantonment. Prompt relief was forthcoming in the shape of tents and the worst of the water was cleared away by steam pumps. There is little doubt that this prompt action in dealing with the water prevented an outbreak of malaria.

In October an outbreak of infection of house zeers by *Stegomyia Fasciata* was recorded and was followed by an outbreak of Dengue fever. (See note on Nahūd).

Government Schools. The spleen index was found to be 4 %. The trachoma index was 10 %.

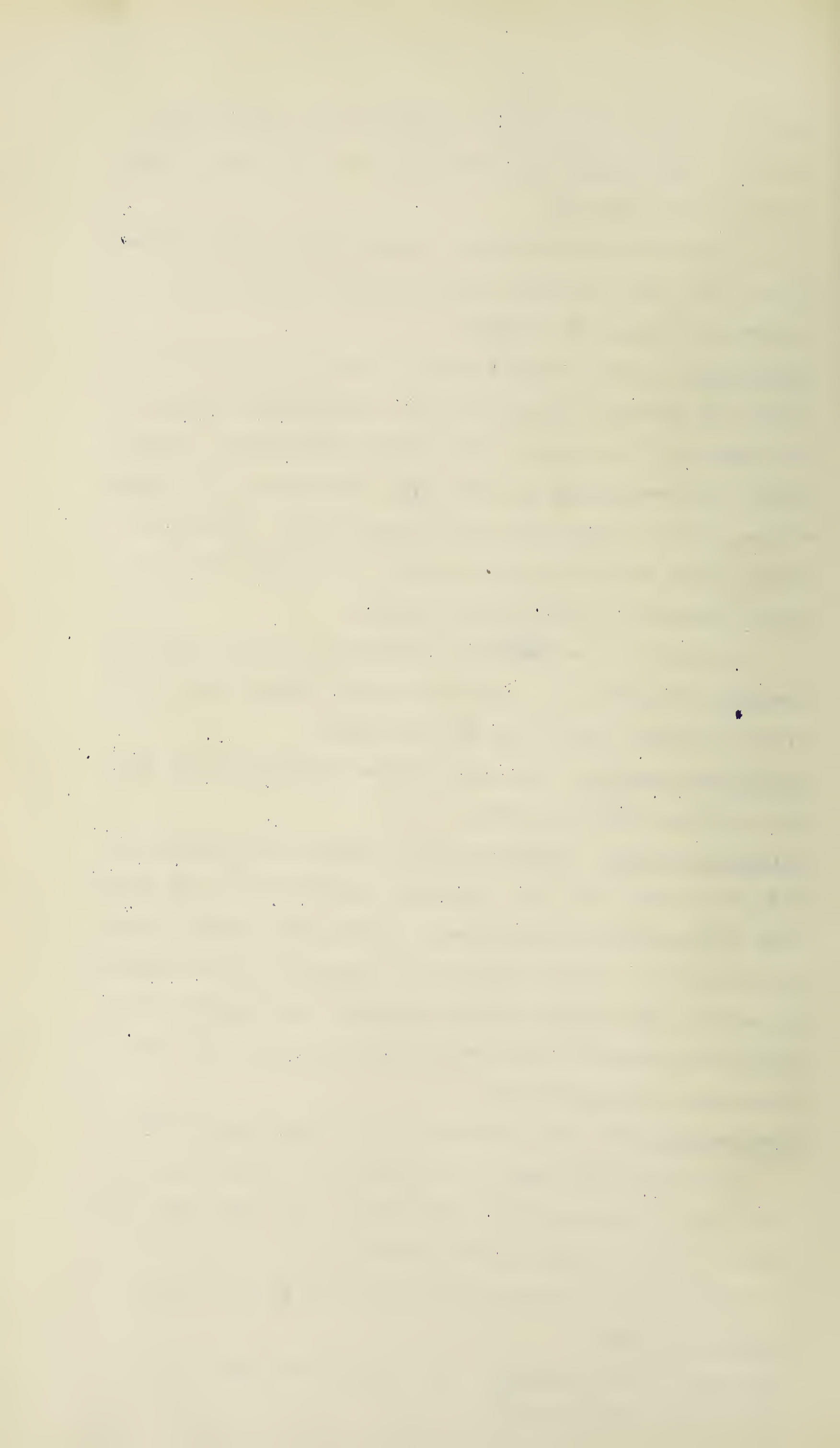
Railway Battalion. Examination of recruits to this battalion shows that 57 % are infected with Bilharzia, and 23.5 % with Bilharzia and Ankylostoma. These cases are all treated and cured. But if the recruits coming to other Egyptian Battalions are equally heavily infected the danger of the increased spread of these two diseases in the Sudan from this cause is considerable.

Dispensaries have been re-opened at Wad Hamid and Zeidab.

The rains were very heavy throughout the province, and there was an increase of malaria on all the farms from this cause. The privately owned farms have given a great deal of trouble by not carrying out orders and instructions.

RED SEA PROVINCE:-

Port Sudan Civil Hospital. The work of the hospital continues to be satisfactory.



An effort has been made to improve the general sanitation.

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Four tenseater deep pit latrines ~~43~~ feet deep have been sunk in the coral on the eastern side of the harbour and one of four seats on the west side.

The latrines have some 3-5 feet of salt water standing in them, the level of the subsoil water being some 9 feet below the surface. In use these latrines have proved very satisfactory, a three day count on one of them showed that 1200 people had made use of it.

Rats. Between June and October 285 rats were caught. 90 % of these rats were of the brown sewer type. 10 % of the black domestic type.

Suakin Pilgrim Quarantine. This year's pilgrimage was declared clean for plague ^{and} ~~xxx~~ cholera. There were three cases of small pox among returning pilgrims, a great improvement on last year.

Every endeavour is being made to ensure the successful vaccination of all pilgrims previously to their departure; by this means it should be possible to obviate any cases of small pox occurring among returning pilgrims.

Tokar. An epidemic of small pox broke out at Tokar in December, 1922, and lasted till May, 1923.

63 cases occurred - 46 in Tokar and 17 in the outlying districts. The case mortality was 25 % of the treated cases.

13,500 vaccinations were performed in Tokar and 13,500 in the outlying districts.

The Red Sea Province is the only part of the north and central Sudan where up to the present it has not been possible to carry out universal vaccination.

BLUE NILE PROVINCE:-

The health of the province has been very satisfactory. The malarial rate throughout the province shows a marked

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improvement. Three cases of small pox occurred in villages around Sennar, but the disease did not spread. This is to be attributed to the thorough vaccination that was carried out eight months ago.

^{17 cases of}
~~No~~ cerebro-spinal fever occurred this year. Five cases of Malta fever occurred in the province.

Wad Medani Civil Hospital. A new civil hospital to accommodate 110 patients is in in course of construction and two wards are almost completed. This hospital is urgently needed to meet the additional strain thrown on the hospital by the large canalisation work and will later be needed to deal with the increased concentration of population in this area.

The condition of the area immediately around Wad Medani town has been greatly improved by the construction of new drains to remove the water which accumulates in this area during the rainy season.

Managil. It has at length become possible to open a small dispensary at this Merkaz as has been done at the other Merkaz towns for several years now. Managil was almost completely cut off from Wad Medani during the rains this year.

Canalisation Area. The canalisation work which is at present confined chiefly to the area between Hag Abdulla and Barakat needs the most constant supervision.

The supervision of this work is entrusted to a Medical Inspector who is stationed at Wad Medani and devotes his time to the supervision of the canalisation works and the health of the British engineers and the Egyptian navvies employed on the work.

Makwar. The work at Makwar and on the irrigated area was recommended last winter, and the health and the ~~sanitation~~ ^{sanitation} of a large number of Europeans and natives have since had to be

arranged for both at Makwar and in the canalisation area.

At Makwar an embankment, three kilometres long, was made along the river bank raising it well above flood height and a series of pumps was placed at important drainage points and in this way the rain flood water was pumped out and the whole marshy area to the north of the Dam was kept dry. This has proved a most efficient anti-mosquito measure. As many as 11,657 pools of water have to be dealt with at Makwar after a heavy rain.

The percentage of admissions for malaria for the nine months from January 1st. to September 30th. 1923, was :-

For Europeans employed on the works and in the canalisation area 2.6

For Egyptians employed on the works and in the canalisation area 1.93

The rainfall table at Makwar for the last six years is as follows:-

	1918	1919	1920	1921	1922	1923
April	d r o p s		6.5	1.5	d r o p s	
May	6.1	20.8	13.0	44.0	0.2	33.3
June	32.1	49.7	68.9	48.5	95.6	98.1
July	131.1	96.0	23.1	67.2	183.1	125.3
August	216.3	92.0	213.5	123.3	147.6	115.3
September	2.5	133.8	84.5	51.1	51.2	81.1
Total =	390.1	392.3	409.5	343.4	477.7	453.1

During the previous rainy season when the work was closed down and precautions were in consequence largely relaxed the percentage of admissions for malaria for the months of July, August and September, 1922, was as follows:-

Month	Strength		Admission for Malaria		% admitted	
	European	Egyptian	European	Egyptian	European	Egyptian
1922						
July	41	61	-	3	0.0	4.9
August	34	58	-	10	0.0	17.2
September	35	57	7	30	20.0	52.6
Total =					20.0	74.7
3 months' average =					6.6	24.9

That is to say that the admission rate of Egyptian workmen for these three months has been decreased from 24.9 to 1.93

The contrast is striking and points to the ~~absolute~~ absolute necessity for elaborate anti-mosquito and sanitary precautions.

KORDOFAN PROVINCE:-

The general health of the province has been good.

Small Pox. Five cases of small pox occurred at El-Obeid, but the disease did not spread.

Nahud Civil Hospital. A new stone administrative block has been built and a new semi-permanent men's ward. An out-patient dressing room and a clinical laboratory are still needed and it is hoped to add these two rooms to the administrative block in 1925.

The Medical Officer reports that he came across 16 cases of Goitre (not associated with Grave's disease) on his tours.

An outbreak of Dengue fever occurred in October. Mosquitoes were found to have been breeding in some of the water-storing trees and in zeers.

Soderi. A new dispensary has been opened at Soderi in charge of an Assistant Medical Officer to reach the camel owning tribes of northern Kordofan. The work done there has been immensely appreciated by the natives.

Abu-Zabad. A dispensary is being opened at Abu Zabad to reach the Baggara Arabs, and to deal with the Bilharziasis which is endemic in that region.

The dispensaries at Um Rusba and Rashed are doing good work.

WHITE NILE PROVINCE:-

The hospitals at El-Dueim and Kosti which are both in charge of Assistant Medical Officers continue to do good work. The health of the railway employes on the Kosti-El Obeid section of line was good.

HALFA PROVINCE:-

The hospital at Halfa continues to do good work.

The returns show an unduly large number of cases of Bilharzia, Trachoma and Dysentery. The prevalence of the two former diseases is no doubt due to the proximity and constant communication with Egypt.

Some other explanation for the prevalence of dysentery must be found. I consider that a proper water supply for the town is urgently needed.

DONGOLA PROVINCE:-

It is regretted that owing to lack of staff it will be impossible for a Medical Inspector to be detailed to this province during the ensuing winter.

There are now four dispensaries in this province in addition to the hospitals at Merowé and Dongola and there is also a temporary Bilharzia post working at Tangassi Island. Of the four dispensaries two are situated in Bilharzia centres and are carrying out anti-Bilharzia work. Bilharzia. 923 cases of Bilharzia were reported as cured in the year ending October 1923 as against 470 in the preceding year.

Of the Bilharzia cases coming under treatment 70 % are small boys.

In 1921, 8 Bilharzia centres were reported. The percentage of school children infected with Bilharzia at these places was 20 %.

In March, 1923, the percentage was 36 %.

It has been found possible to set free the Medical Officers at Merowé and Dongola to inspect the dispensaries and districts under their charge by posting Assistant Medical Officers to these hospitals instead of clerks. These Assistant Medical Officers are able to perform the clerical work at these hospitals which is very light and in addition to assist the Medical Officers in their medical and surgical work and to look after the hospitals in their absence.

This is a great step forward, whereas, before, the work of the Assistant Medical Officers and Sanitary Barbers was never checked unless a Medical Inspector was on tour in the province, Now the work of the whole province is inspected every month by the Medical Officers.

UPPER NILE PROVINCE:-

Malakal Civil Hospital is nearly completed. The 2nd. and 3rd. class wards and the operating block are now in use. This is needed to meet the large increase of patients which has taken place during the last two years.

It will be seen from the figures given below that the number of patients has doubled since 1921. This must be attributed to the work commenced by Dr. Footner in this province and the work of the "Lady Baker":-

	<u>In-patients</u>	<u>Out-patients</u>
1921	470	8432
1922	322	11415
1923	901	19301

The "Lady Baker" continues to do very excellent work.

The dispensaries at Renk and Kodok continue to do good work and are increasingly appreciated.

KASSALA PROVINCE:-

The medical provision in this province includes a newly built and thoroughly satisfactory hospital at Kassala.

A very small civil hospital at Gádaref.

A very primitive little dispensary at Mefaza looked after by a tumargi, and a small dispensary at Gallabat which is looked after by the Military medical officer.

The arrival of the railway at Kassala and the development of the Gash delta will largely increase the medical and sanitary work to be carried out at Kassala.

The new hospital is quite adequate to meet any demands that are likely to be thrown on it at present, but several

dispensaries will need to be opened in the Delta so as to afford medical assistance to cultivators out of reach of the hospital.

A Medical Inspector is being asked for for work in this province so as to ensure a British Medical Officer being centred on Kassala all the year round.

If in the near future the railway is extended to Gedaref a large increase in medical work is to be anticipated there and increased hospital accommodation will have to be provided.

A proper dispensary staffed by an Assistant Medical Officer and an assistant tumargi is at present needed at Mefaza.

The civil hospital at Gedaref is in charge of an Assistant Medical Officer who works under the supervision of the Senior Medical Officer or in his absence of the Military Medical Officer. His work has been very satisfactory.

I am of the opinion that medical work is likely to very largely increase in this region during the next few years.

THE FUNG PROVINCE:-

Singa District. No serious epidemics occurred, but 13 cases were admitted to hospital suffering from Kala-Azar; other cases are said to exist in the Merkez.

In the southern region there has been an outbreak of small pox again, in the Fazogli district.

This disease appears to be re-introduced at intervals from Abyssinia. An effort is being made to make vaccination more universal in this district.

MIDWIFERY SCHOOL AT OLDURMAN:-

The work of this school is making very gratifying

progress. It has already very markedly raised the standard of midwifery in Omdurman and in addition midwives are beginning to be sent up from the provinces for training. It is hoped that the work of the school will in time permeate the whole Sudan.

Up to date 42 midwives have been trained at the school.

Twenty two of these are practising at Omdurman.

Three " " " " " Khartoum, and

Eight " " " " " in the provinces.

Miss Wolff reports a marked improvement in the type of women coming up for training; most of them being of a younger generation, are more amenable to discipline and quicker to learn.

It has been decided to extend the length of the course from four months to six months. This will mean that there only be one course every year instead of two, but on the other hand it will allow of a fuller and more thorough course being given. It will have the additional advantage of setting Miss Wolff free for two months, during which time she can visit some of the ^{principal} provincial centres and there supervise the work of the midwives she has already trained, examine the existing midwives, and select suitable women for training at Omdurman.

Welfare work. Miss Wolff also conducts a welfare class in connection with the midwifery school for expectant mothers and mothers with young children.

It is hoped to be able to further encourage the feeling of confidence thus inspired among all classes of women at Omdurman by building an entirely self contained women's hospital completely separated from the rest of the hospital. It is hoped that in this way the work among the female population may be greatly and usefully extended.

VITAL STATISTICS:-

No further improvement can be recorded in the completeness of the returns of births and deaths in the Sudan as a whole.

As regards the extreme southern provinces registration is only compulsory in Mudiriyahs or Merkaz towns.

As regards the northern and central Sudan however it is a matter of the greatest importance that adequate vital statistics should be available.

I am inclined to think that about two thirds of the births and half of the deaths still remain unrecorded, but I believe that with the staff at present available the limit of possible completeness has been ~~reached~~ reached.

Under the existing arrangements the names, etc. of the newly born and of the recently dead are collected and brought in every month by the Maazoons and handed over to the Mamur of the Merkaz or if a Medical Officer is stationed there to the Medical Officers who are respectively the Registering Authorities.

The Maazoons are unpaid clerks under the authority of the Legal Department who are permitted to record marriages and divorces for a fee and report the same to the Kadi.

They draw travelling allowance for visiting their Merkaz towns.

There is as a rule only one Maazoon to an Omodiah and in some cases only one to two or three Omodiahs and such an Omodiah may comprise as many as 60 or even 90 villages and these villages may be separated by very considerable distances. In such a case supposing the Maazoon travelled every day in the month he could not get round half of the villages in his district in a month. The impossibility of obtaining returns which are of any use under such circumstances is apparent.

ALFRED W. SUMNER

Young people who want to marry may be prepared to go a considerable distance to meet the Maazoon, but if a Maazoon is to obtain any information about a birth he must visit the village and possibly even the house.

The matter is a very important one and a solution is being sought at the present moment.

The births and deaths recorded for 1921, 1922, 1923 are:-

Births	23587	33673	30878
Deaths	18991	18519	22829

TUBERCULOSIS:-

The hundred and fifty one cases were admitted to hospital for tuberculous disease during the year

The admissions for this disease showing the percentage of total admissions, for the previous eight years, are as follows:-

1916	1917	1918	1919	1920	1921	1922	1923
149	194	216	191	219	220	234	251
1.3%	1.54%	1.53%	1.4%	1.41%	1.50%	1.35%	1.58%

Of the 1923 cases 203 are male and 48 are female and a similar disproportion occurs in the other years recorded; this points out the fact that a very much smaller proportion of women report for treatment than men, not that fewer women are affected. I think it would be correct to assume that only a small proportion of actually infected cases are ever seen at the hospital. In spite of this however, I believe that the incidence rate to the population is a low one. Nor do I think that the slight increase of admissions shown in the table above indicates an increase in the disease, but rather a greater willingness to attend the hospital for treatment and that a more vigilant watch is being kept for tubercular cases. This is borne out by the fact the percentage rate of tuberculous cases to the total admissions has remained practically constant over these eight years & this in spite of more careful diagnosis.

I am of the opinion that tuberculosis is markedly predisposed to by a high malarial incidence.

Malaria lowers the vitality and gives the latent tuberculous infection its chance.

At the same time the native huts are hermetically sealed at night to prevent the entry of mosquitoes & the transmission of pulmonary tuberculosis is thus favoured.

I believe that the decrease of pulmonary tuberculosis will march hand in hand with the decrease of malaria, as mosquito prevention gradually becomes effective over wide areas of the Sudan. A great deal is to be expected also from the gradual rise in the standard of living. An appreciable proportion of the population is at present under-nourished.

DYSENTERY:-

There has been a steady increase in the number of cases of dysentery admitted to hospitals over the last 8 years. The Amoebic & Bacillary are shown separately for the last 3 years only. I think this increase must be attributed to the greater readiness to resort to the hospital and greater accuracy of diagnosis on the part of the doctor.

	1916	1917	1918	1919	1920	1921	1922
Dysentery:-	Ad. D.	Ad. D.	Ad. D.	Ad. D.	Ad. D.	Ad. D.	Ad. D.
Amoebic)	-	-	-	-	-	477 19	590 20
Bacillary))	197 8	220 9	355 16	409 20	448 17	-	-
	-	-	-	-	-	89 3	48 2
Total	197 8	220 9	355 16	409 20	448 17	566 22	438 22

1 9 2 3.
Ad. D.

Amoebic	504	16
Bacillary	27	--
Total	531	15

=====

YAWS:-

A very large number of cases of yaws are treated as out-patients by the "Lady Baker". These are not shown as admissions to hospitals. Thirteen hundred cases were treated between June and October, 1922.

QUARANTINE:-HALFA.-

The quarantine station was opened at Halfa from November 1922 to May 1923 to permit of the examination, delousing and treatment for Ankylostomiasis of all gangs of Saidi labourers proceeding to the Sudan.

3081 saidi labourers passed through the camp. Of these 36 were rejected. Of these rejections 7 were for favus, 4 for active syphilis, 21 for old age and 4 for other reasons.

Of these passed through, the percentage of infections with various diseases or parasitism was as follows:-

Bilharziasis	29.7%
Ankylostomiasis	12.6%
Ascars	4.4%
Taenia	4.2%
Enlarged spleen	.9%

PORT SUDAN.-

The shipping entering Port Sudan harbour shows an increase on last years figures

	<u>1922-23</u>	<u>1921-22</u>	<u>1920-21</u>
Ships	563	452	412
Sambuks	755	614	587

12 British Warships are included in total of ships.

SCHOOLS:-

An endeavour is being made to obtain a complete annual Medical Survey of all the Primary Schools throughout the Sudan as well as the Gordon College.

The annual Medical Survey in the case of the Gordon College has been complete since 1921-22.

In the provinces however, owing to lack of staff, it has not yet been found possible to make a complete annual survey.

The chief causes of ^{unfitness} infection in the schools are

1. Bilharzia
2. Other worm infections
3. Trachoma
4. Chronic malaria
5. Defective vision largely due to Trachoma.

The most wide-spread disease is Trachoma. Every endeavour is made to combat this disease.

In schools where there is no doctor or Assistant Medical Officer available to carry out the treatment, one of the masters is taught the necessary technique and his work is supervised from time to time by a Medical Inspector or Medical Officer on tour. The chief difficulty experienced is the continued reinfection of the school children from their homes, particularly during the long summer holidays.

This is illustrated from Dr. Smith's report on his tour in Dongola.

In November 1921 he examined 352 school children in 13 schools and found the percentage of trachoma cases to be 18.75. In spite of work by the Medical Officers, Assistant Medical Officers and the specially instructed masters, on his return in November 1922, he found 34% infected. By the following February the percentage had been reduced to 27.

The rise in the percentage is due to the admission of new pupils, nearly all of whom are infected, and reinfection during the holidays.

(25)

The key to the situation is the effective treatment of neglected children of under school age throughout the Province. An effort is being made in this direction, but it is very difficult to carry out effectively with the staff available. Matters would be much facilitated if it were possible for a British Medical Officer to spend more time in the Province.

BILHARZIA is only endemic in certain regions; thus the schools in the Blue Nile Province are almost unaffected, while the schools in Dongola Province were heavily infected.

In November 1922, 20% of the school children in Dongola Province were reported as infected with urinary Bilharzia.

In 1923 the percentage had been reduced to .6

This extremely satisfactory improvement is the result of the systematic anti-bilharzial work that has been carried out in Angola Province.

O. F. H. A Tracy

W A R T O U M:—

10th March, 1924.

DIRECTOR,
MEDICAL DEPARTMENT,
SUDAN GOVERNMENT.

T a b l e - I.

shows number of Out-patients
1923

	Total	%	Free	%	On Payment	%
Government Employees	172611	44.4	163189	48.0	9422	19.2
School Children	61830	15.9	61655	18.1	175	0.4
Prisoners	25401	6.5	25401	7.5	-	-
All Others	119021	33.2	89683	26.4	39338	80.4
Grand Total =	388863	100.0	339928	100.0	48935	100.0

T a b l e - II.

shows Sudan Government Officials placed on Sick List
or admitted to Hospitals during 1923

Nationality	Total No. of days spent in hospital and Sick List
British	1506
Other Europeans	73
Syrians & Egyptians	3850
Sudanese	2613
Total =	8042

T a b l e - I I I .
Registration of Births & Deaths by Provinces- 1923.

P r o v i n c e	B i r t h s		S t i l l B i r t h s		D e a t h s	
	Europeans		Natives		Europeans	
	M.	F.	M.	F.	M.	F.
Khartoum	25	10	1545	1483	13	949
Halifa	-	-	712	739	-	307
Red Sea	7	6	135	122	6	305
Berber	8	1	1799	1680	3	988
Dongola	1	-	2295	2227	-	1066
Kassala	1	2	757	675	1	1171
Blue Nile	1	-	3281	2782	2	523
Fung	-	-	1060	914	-	2712
White Nile	-	-	1246	1058	-	1033
Kordofan	1	-	2729	2314	-	1123
Bahr-el-Ghazal	-	-	13	23	1	1615
Upper Nile	1	-	35	35	-	25
Nuba Mountains	-	-	231	211	-	38
Mongalla	-	-	4	2	1	228
Darfur	-	-	63	44	-	6
						111
						3
						109
Total	45	19	15905	14309	26	11759
						11035
Total	64		30214		35	22794
Grand Total			30278	1029		22829

% of Still Births to Births = 3.39 approx.

T a b l e - IV.

shows the death rate per 1,000 births - children under
one year of age

Province	Births registered	Deaths under one year	Rate per 1000
Khartoum	3063	215	70.2
Halifa	1451	107	73.7
Red Sea	270	61	225.9
Berber	3488	166	47.5
Dongola	4523	385	85.1
Kassala	1435	37	25.7
Blue Nile	6064	387	63.8
Fung	1974	66	33.4
White Nile	2304	130	56.4
Kordofan	5022	128	25.3
Bahr-el-Ghazal	36	5	138.8
Upper Nile	71	3	42.2
Nuba Mountains	442	1	2.2
Mongalla	6	1	166.6
Darfur	107	7	65.4
Total	30278	1699	56.1

T a b l e - V.

shows the admissions and deaths by
diseases.

Disease	T o t a l							
	Europeans				Natives			
	Male		Female		Male		Female	
	A.	D.	A.	D.	A.	D.	A.	D.
<u>Table "A"</u>								
<u>TUBERCULAR.</u>								
1. Disease of lung	1	-	-	-	91	14	16	3
2. All other tubercular diseases	-	-	1	-	111	7	31	1
<u>VENEREAL.</u>								
3. Syphilis	5	-	-	-	899	4	347	1
4. Gonorrhoea	9	-	-	-	565	-	73	-
5. Soft Sore	-	-	-	-	18	-	-	-
<u>E Y E.</u>								
6. Trachoma	-	-	-	-	77	-	4	-
7. All other eye diseases	8	-	-	-	530	-	115	-
8. EAR	1	-	-	-	66	-	4	-
9. SKIN	7	-	1	-	205	1	12	-
10. WOUNDS & OTHER INJURIES	38	1	1	-	3545	46	251	12
<u>TUMOURS.</u>								
11. Malignant	-	-	2	-	29	6	25	4
12. Non Malignant	-	-	-	-	30	1	23	1
<u>OF WOMEN.</u>								
13. Gynaecological	-	-	10	-	-	-	28	5
14. Confinements	-	-	28	-	1	-	22	1
15. POISONING.	-	-	-	-	3	1	1	1
Total Table "A"	69	1	43	-	6170	80	1022	29
<u>Table "B"(Tropical)</u>								
1. Ankylostomiasis	1	-	-	-	437	-	2	-
2. Bilharziasis	-	-	-	-	113	-	1	-
3. Blackwater Fever	-	-	-	-	4	-	-	-
4. Dysentery, Amoebic	15	-	-	-	452	12	37	1
5. Dysentery, Bacillary	4	-	2	-	20	-	1	-
6. Filariasis	-	-	-	-	2	-	-	-
7. Madura Disease	-	-	-	-	87	-	11	1
8. Malaria	87	-	8	-	4356	51	97	4
9. Leishmaniasis (Kala-Azar)	-	-	-	-	19	11	-	-
10. Trypanosomiasis	-	-	-	-	-	-	-	-
11. Yaws	-	-	-	-	-	-	2	-
12. Sunstroke	-	-	-	-	2	-	-	-
13. Heatstroke	-	-	1	1	-	-	-	-
14. Guinea Worm	-	-	-	-	12	-	-	-
15. Non Filorial Elephantiasis	-	-	-	-	1	-	-	-
Total Table "B"	107	-	11	1	5505	74	151	6

T a b l e - V.(Continued)

Disease	T o t a l							
	Europeans				Natives			
	Male		Female		Male		Female	
	A.	D.	A.	D.	A.	D.	A.	D.
<u>Table "C"(Infective)</u>								
1. Anthrax	-	-	-	-	1	1	-	-
2. Beri-Beri	-	-	-	-	-	-	-	-
3. Cerebro-spinal Mening.	-	-	-	-	17	13	-	-
4. Chicken Pox	-	-	-	-	2862	42	9	1
5. Cholera	-	-	-	-	-	-	-	-
6. Dengue	-	-	-	-	5	-	-	-
7. Diphtheria	-	-	-	-	3	1	4	-
8. Enteric (Including paratyphoid)	7	-	-	-	18	2	-	-
9. Erysipelas	-	-	-	-	3	1	-	-
10. Gastro-enteritis of children	-	-	-	-	1	-	-	-
11. German Measles	-	-	-	-	-	-	-	4
12. Influenza	8	-	-	-	267	-	6	-
13. Leprosy	-	-	-	-	12	-	1	-
14. Malta Fever	1	-	-	-	11	-	-	-
15. Measles	1	-	-	-	85	-	16	-
16. Mumps	-	-	-	-	27	-	2	-
17. Pellagra	-	-	-	-	-	-	-	-
18. Puerperal Fever	1	-	3	-	-	-	5	1
19. Phlebotomus	3	-	-	-	9	-	-	-
20. Plague	-	-	-	-	-	-	-	-
21. Pneumonia (Epidemic)	-	-	-	-	67	11	7	3
22. Rabies	-	-	-	-	-	-	-	-
23. Relapsing Fever	-	-	-	-	2	-	-	-
24. Rheumatic Fever	3	-	-	-	43	1	6	-
25. Scarlet Fever	-	-	-	-	1	-	-	-
26. Tetanus	-	-	-	-	1	-	1	-
27. Typhus	-	-	-	-	-	-	-	-
28. Whooping Cough	-	-	-	-	2	-	1	-
29. Small Pox	-	-	-	-	13	2	3	-
<u>Total Table "C"</u>	23	-	2	-	860	34	61	5
<u>Table "D"</u>								
1. Circulatory System	15	4	3	1	236	15	47	9
2. Respiratory System	15	1	1	-	730	50	38	5
3. Alimentary System	62	2	7	1	846	31	98	12
4. Genito-Urinary System	15	1	4	-	380	13	31	4
5. Nervous System	13	-	3	1	137	14	24	3
6. Scurvy	-	-	-	-	24	-	-	-
7. Diabetes	1	-	-	-	44	2	1	-
8. Fever of uncertain origin	16	-	-	-	713	6	18	1
9. All other disease	25	-	3	-	552	11	46	1
<u>Total Table "D"</u>	262	8	21	3	3662	142	303	35
" " "A"	69	1	43	-	6170	80	1022	29
" " "B"	107	-	11	1	5505	74	151	6
" " "C"	23	-	2	-	860	34	61	5
<u>Grand Total</u>	361	9	77	4	16107	330	1537	75

T a b l e - VI -
shows Births, Deaths by ages and Still Births.

Nationality	B i r t h s		Deaths by ages								Total Deaths		Total Still-Births	
	Male	Female	Under 1	1 - 5	5 - 10	10 - 20	20 - 40	40 - 60	Over 60	Male	Female	Male	Female	
British	12	5	3	1	1	-	1	1	-	4	3	-	-	
Greek	26	12	4	1	-	2	8	2	3	14	6	1	-	
Other Europeans	7	2	1	-	2	1	1	2	1	8	-	1	1	
Egyptians & Syrians	416	383	59	48	16	13	44	29	35	145	99	12	6	
Natives of Sudan	15455	13898	1620	3842	1496	1733	4233	4600	4855	11478	10901	620	386	
All others	34	28	12	12	3	17	87	24	16	136	35	2	-	
Total	15950	14328	1699	3904	1518	1766	4374	4658	4910	11785	11044	636	393	
Grand Total	30278		22829								22829		1029	
% Deaths by ages			7.4	17.1	6.6	7.7	19.1	20.4	21.0					

T a b l e - V I I .

Vaccinations performed during the year 1923

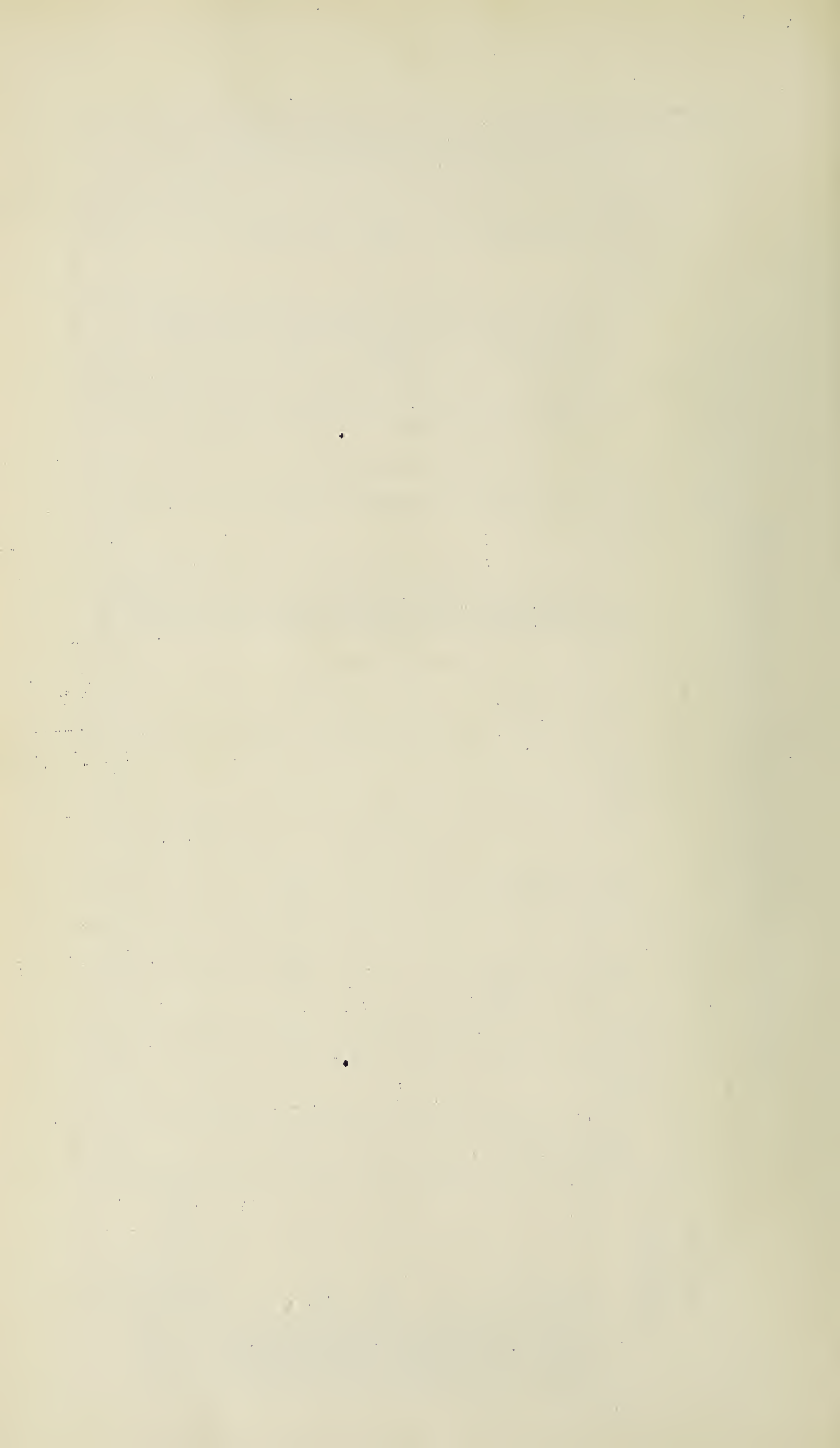
Province	P r i m a r y			Re-vaccination			T o t a l		
	Success	Failed	Unknown	Success	Failed	Unknown	Success	Failed	Unknown
Khartoum	1174	125	1545	160	113	53	1334	238	1598
Halfa	4491	649	5788	-	-	-	4491	649	5788
Red Sea	2367	529	42365	1344	117	419	3711	646	42782
Berber	3862	776	68	-	-	-	3862	776	68
Dongola	5205	1041	6	-	-	62	5205	1041	70
Kassala	3851	1098	281	-	-	-	3851	1098	281
Blue Nile	38451	1213	1123	320	50	-	38771	1263	1123
Fung	2536	542	3905	146	96	623	2682	638	4528
White Nile	1282	103	1811	62	10	-	1344	113	1811
Kordofan	1763	1074	165	248	259	300	4211	1333	465
Bahr-el-Ghazal	2548	1636	2161	12	6	-	2560	1642	2161
Upper Nile	53	40	16	15	40	34	68	80	50
Nuba Mountains	212	188	92	-	20	-	212	208	92
Mongalla	668	773	468	47	236	-	715	1009	468
Darfur	62	1	1	-	-	-	62	1	1
Total	68525	9788	59793	4554	947	1453	73079	10735	84286

Total all vaccinations = 145,100.

Table - VIII.

Admissions and Deaths in Hospitals during 1923

Hospital or Dispensary	E u r o p e a n s			N a t i v e s		
	1 9 2 2			1 9 2 3		
	Adm.	Deaths	%	Adm.	Deaths	%
Khartoum	144	6	4.1	171	7	4.0
Omdurman	44	-	-	2	-	-
Atbara	71	6	8.4	115	5	4.1
Port Sudan	2	1	50.	2	-	4.3
Suakin	-	-	-	1	-	-
Merowe	-	-	-	-	-	-
Dongola	-	-	-	6	-	-
Halfa	-	-	-	-	-	-
Dueim	4	-	-	-	-	-
Medani	2	-	-	-	-	-
El-Obeid	-	-	-	-	-	-
Nahud	2	-	-	-	-	-
Kassala	-	-	-	-	-	-
Gedaref	-	-	-	-	-	-
Makwar	167	2	1.1	116	-	-
Singa	-	-	-	-	-	-
Malakel	1	-	-	1	-	-
Kosti	1	-	-	-	-	-
Khartoum North	-	-	-	-	-	-
Abu Hamed	-	-	-	-	-	-
Port Sudan Prison	-	-	-	-	-	-
Khrtn. North	-	-	-	-	-	-
Gebel Aulia	-	-	-	-	-	-
Total	439	15	3.4	438	13	2.9
				17302	394	2.2
				17734	405	2.2



T a b l e - XIII.

statement of estimated expenditure during the year 1923
and budgetry estimates for 1924

I t e m	1923 Actual Expenses £.	1924 Budget Estimates £.
<u>PERSONNEL:-</u>		
1. <u>HEADQUARTERS:-</u>		
a. Classified	13468	15096
b. Unclassified	382	410
2. <u>HOSPITALS:-</u>		
a. Classified	29227	29052
b. Unclassified	6718	6771
3. <u>QUARANTINE:-</u>		
a. Classified	1860	2364
b. Unclassified	565	565
4. <u>SLEEPING SICKNESS:-</u>		
a. Classified	7344	8088
b. Unclassified	811	790
<u>ALLOWANCES & SERVICES:-</u>		
Headquarters	29113	25414
Hospitals	12108	12315
Quarantine	1214	1587
Sleeping Sickness	7878	7596
	110688	110048
To be recovered from other sources	8758	10862
	£.101930	£.99186

